

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Original): A magnetic random access memory comprising:
a write wiring constituted by at least one wiring;
a magnetic tunnel junction device which is disposed closely to the write wiring and in which information is written in accordance with an induced magnetic flux generated by supplying a current to the write wiring; and
a magnetic layer which is provided so as to cover at least a part of a sidewall of the write wiring and formed by grown columnar grains and in which the growing direction of the columnar grains is 30° or less from the normal-line direction of the sidewall.

Claim 2 (Original): The magnetic random access memory according to claim 1, wherein the write wiring serves as a bit line.

Claim 3 (Original): The magnetic random access memory according to claim 1, wherein the write wiring serves as a write word line.

Claim 4 (Original): The magnetic random access memory according to claim 1, wherein the write wiring serves as a bit line and a write word line.

Claim 5-12 (Canceled).

Claim 13 (Original): A magnetic random access memory comprising:
a write wiring constituted by at least one wiring;

a magnetic tunnel junction device which is disposed closely to the write wiring and in which information is written in accordance with an induced magnetic flux generated by supplying a current to the write wiring; and

a magnetic layer including at least two of the following three types such as a type which is provided so as to cover a part of a sidewall of the write wiring and constituted by grown columnar grains and in which the growing direction of the columnar grains is 30° or less from the normal-line direction of the sidewall, a type having a structure in which grains are deposited like a layer, and a type having a structure in which grains are amorphously deposited.

Claim 14 (Currently Amended): The magnetic random access memory according to claim 13, wherein the write wiring ~~wiring~~ serves as a bit line.

Claim 15 (Original): The magnetic random access memory according to claim 13, wherein the write wiring serves as a write word line.

Claim 16 (Original): The magnetic random access memory according to claim 13, wherein the write wiring serves as a bit line and a write word line.

Claim 17 (Withdrawn): A method for manufacturing a magnetic random access memory on a semiconductor substrate having a write wiring constituted by at least one wiring and a magnetic tunnel junction device which is disposed closely to the write wiring and in which information is written in accordance with an induced magnetic flux generated by supplying a current to the write wiring, the method comprising:

forming an insulating film on the semiconductor substrate;

forming a trench in the insulating film;
depositing a magnetic body on the bottom face of the trench;
depositing a magnetic layer including at least two of the following three types such as
a type having a structure in which the growing direction of columnar grains is 30° or less
from the normal-line direction of sidewalls of the trench, a type having a structure in which
grains are deposited like a layer, and a type having a structure in which grains are
amorphously deposited, on the sidewalls of the trench; and
embedding the write wiring in the trench.

Claim 18 (Withdrawn): The method according to claim 17, wherein the write wiring
serves as a write word line.

Claim 19 (Withdrawn): A method for manufacturing a magnetic random access
memory on a semiconductor substrate having a write wiring constituted by at least one wiring
and a magnetic tunnel junction device which is disposed closely to the write wiring and in
which information is written in accordance with an induced magnetic flux generated by
supplying a current to the write wiring, the method comprising:

forming an insulating film on the semiconductor substrate;
depositing a wiring material on the insulating film and forming the write wiring by
patterning the wiring material, and

depositing a magnetic layer including at least two of the following three types such as
a type having a structure in which the growing direction of columnar grains is 30° or less
from the normal-line direction of sidewalls of the write wiring, a type having a structure in
which grains are deposited like a layer, and a type having a structure in which grains are
amorphously deposited, on the write wiring by using a sputtering method.

Claim 20 (Withdrawn): The method according to claim 19, wherein the write wiring serves as a bit line.

Claim 21 (Withdrawn): A method for manufacturing a magnetic random access memory a semiconductor substrate having a write wiring constituted by at least one wiring and a magnetic tunnel junction device which is disposed closely to the write wiring and in which information is written in accordance with an induced magnetic flux generated by supplying a current to the write wiring on, the method comprising:

forming an insulating film on the semiconductor substrate;

forming a trench in the insulating film;

depositing a magnetic body on the bottom face of the trench;

depositing a magnetic layer including at least two of the following three types such as a type having a structure in which the growing direction of columnar grains is 30° or less from the normal-line direction of sidewalls of the trench, a type having a structure in which grains are deposited like a layer, and a type having a structure in which grains are amorphously deposited on the sidewalls of the trench by ionizing sputter grains of a magnetic body and flying the ionized supper grains onto the surface of the magnetic body on the bottom face of the trench; and

embedding the write wiring in the trench.

Claim 22 (Withdrawn): The method according to claim 21, wherein the write wiring serves as a write word line.

Claim 23 (Withdrawn): A method for manufacturing a magnetic random access memory on a semiconductor substrate having a write wiring constituted by at least one wiring and a magnetic tunnel junction device which is disposed closely to the write wiring and in which information is written in accordance with an induced magnetic flux generated by supplying a current to the write wiring, the method comprising:

forming an insulating film on the semiconductor substrate;

depositing a wiring material on the insulating film and forming the write wiring by patterning the wiring material; and

depositing a magnetic layer including at least two of the following three types such as a type having a structure in which the growing direction of columnar grains is 30° or less from the normal-line direction of sidewalls of the write wiring, a type having a structure in which grains are deposited like a layer, and a type having a structure in which grains are amorphously deposited on the write wiring.

Claim 24 (Withdrawn): The method according to claim 23, wherein the write wiring serves as a bit line.

Claim 25 (Withdrawn): A method for manufacturing a magnetic random access memory a semiconductor substrate having a write wiring constituted by at least one wiring and a magnetic tunnel junction device which is disposed closely to the write wiring and in which information is written in accordance with an induced magnetic flux generated by supplying a current to the write wiring on, the method comprising:

forming an insulating film on the semiconductor substrate;

forming a trench in the insulating film;

forming a seed layer on sidewalls of the trench;

forming a magnetic layer including at least two of the following types such as a type having a structure in which the growing direction of columnar grains is 30° or less from the normal-direction of the sidewalls of the trench, a type having a structure in which grains are deposited like a layer, and a type having a structure in which grains are amorphously deposited on the inner periphery of the trench by growing the magnetic layer from the seed layer in accordance with a plating method; and
embedding the write wiring in the trench.

Claim 26 (Withdrawn): The method according to claim 25, wherein an NiFe layer is used as the seed layer.

Claim 27 (Withdrawn): The method according to claim 25, wherein a Cu layer is used as the seed layer.

Claim 28 (Withdrawn): The method according to claim 25, wherein the write wiring serves as a write word line.

Claim 29 (Withdrawn): A method for manufacturing a magnetic random access memory on a semiconductor substrate having a write wiring constituted by at least one wiring and a magnetic tunnel junction device which is disposed closely to the write wiring and in which information is written in accordance with an induced magnetic flux generated by supplying a current to the write wiring, the method comprising:

forming an insulating film on the semiconductor substrate;
depositing a wiring material mainly containing Cu on the insulating film and forming the write wiring by patterning the wiring material; and

growing a magnetic layer on the write wiring through a plating method such that the growing direction of columnar grains is 30° or less from the normal-line direction of sidewalls of the write wiring, a structure is provided in which grains are deposited like a layer, or a structure is provided in which grains are amorphously deposited.

Claim 30 (Withdrawn): The method according to claim 29, wherein the write wiring serves as a bit line.